

## WHAT IS CLAIMED:

1. A method for controlling the obtaining of service from a management server, comprising:

providing an indicator on a client, the indicator signifying whether a previous boot up of the client was to a management server;

checking, by a first mechanism, the indicator at a boot up of the client; and

changing, by a second mechanism, a boot sequence on the client if the indicator signifies that the previous boot up of the client was to a management server.

2. The method of claim 1, wherein the indicator comprises a flag in basic input/output system (BIOS) of the client.

3. The method of claim 2, wherein the indicator comprises a counter.

4. The method of claim 1, wherein the checking and the changing are performed in basic input/output system (BIOS) of the client.

5. The method of claim 1, wherein the changing the boot sequence includes ordering a local computer-readable medium before a remote management server in the boot sequence.

6. The method of claim 1, further comprising setting, in accordance with the changing the boot sequence, the indicator to specify that a previous boot up of the client was not to a management server.

8. The method of claim 1, wherein the management server comprises a preboot execution environment (PXE) server.

an indicator configured to signify whether a previous boot up of a client was to a management server;

10. The system of claim 9, wherein the indicator comprises a flag in basic input/output system (BIOS) of the client.

11. The system of claim 9, wherein the checking mechanism and the changing mechanism are implemented in basic input/output system (BIOS) of the client.

12. The system of claim 9, wherein the changing mechanism is configured to order a local computer-readable medium before a remote management server in the boot sequence.

13. The system of claim 9, further comprising a setting mechanism configured to set, in accordance with the changing by the changing mechanism, the indicator to specify that a previous boot up of the client was not to a management server.

14. The system of claim 9, further comprising a boot sequence setting mechanism residing on a remote computer and configured to order a remote management server before a local computer-readable medium in the boot sequence on the client.

15. The system of claim 9, wherein the management server comprises a preboot execution environment (PXE) server.

16. A computer-readable medium encoded with a plurality of processor-executable instruction sequences for:

providing an indicator on a client, the indicator signifying whether a previous boot up of the client was to a management server;

checking, by a first mechanism, the indicator at a boot up of the client; and

changing, by a second mechanism, a boot sequence on the client if the indicator signifies that the previous boot up of the client was to a management server.

17. The computer-readable medium of claim 16, wherein the indicator comprises a flag in basic input/output system (BIOS) of the client.

18. The computer-readable medium of claim 16, wherein the changing the boot sequence includes ordering a local computer-readable medium before a management server in the boot sequence.

19. A method for obtaining service from a management server, comprising:  
sending, by a client to a management agent, a request for service from a management server;  
forwarding, by the management agent to the management server, the request for service via Hypertext Transfer Protocol (HTTP);  
sending, by the management server to the management agent, service information via HTTP; and  
forwarding, by the management agent to the client, the service information.

20. The method of claim 19, wherein the management server comprises a preexecution boot environment (PXE) server.

21. The method of claim 19, wherein the service information comprises bootstrap instructions.

22. A method for obtaining service from a management server, comprising:  
receiving, by a management agent, a request sent by a client, the request comprising a request for service from a management server;  
forwarding, by the management agent to a management server, the request for service via Hypertext Transfer Protocol (HTTP); and  
forwarding, by the management agent to the client, service information sent via HTTP by the management server to the management agent.

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23. The method of claim 22, wherein the management agent comprises a software agent that runs on a client or server.

24. The method of claim 22, wherein the management agent comprises firmware of a networking device.

25. The method of claim 22, wherein the request comprises a DHCP or a BOOTP request.

26. A method for obtaining service from a management server, comprising:  
receiving, by a management server, a request for service, the request having originated with a client, the request having been forwarded to the management server by a management agent via Hypertext Transfer Protocol (HTTP); and  
sending, by the management server to the management agent via HTTP, service information, wherein the management agent forwards the service information to the client.

27. The method of claim 26, wherein the service includes one of installing an operating system or application program and providing diagnostic, upgrade, or system recovery service.

28. The method of claim 26, wherein the service information comprises bootstrap instructions.

29. A method for obtaining service from a management server, comprising:

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the management server sent the service information to the management agent via HTTP.

31. A system for obtaining service from a management server, comprising:  
a client;  
a management agent configured to communicate with the client over a connection;

a management server configured to communicate with the management agent over a connection, wherein

the client is configured to send, to the management agent, a request for service from the management server,

the management agent is configured to forward, to the management server, the request for service via Hypertext Transfer Protocol (HTTP),

the management server is configured to send, to the management agent, service information via HTTP, and

the management agent is configured to forward the service information to the client.

32. The system of claim 31, wherein the management agent runs on the client.

33. The system of claim 31, wherein the client and the management agent communicate in a virtual local area network (VLAN).

34. The system of claim 31, wherein one of a switch and a router physically separates the client and the management server.

35. The system of claim 31, wherein a first virtual local area network (VLAN) includes the client and a second VLAN includes the management server, wherein the first VLAN is distinct from the second VLAN.

36. The system of claim 31, wherein the client and the management agent communicate via the DHCP protocol or the BOOTP protocol.

37. A computer-readable medium encoded with a plurality of processor-executable instruction sequences for:

receiving, by a management agent, a request sent by a client, the request comprising a request for service from a management server;

forwarding, by the management agent to a management server, the request for service via Hypertext Transfer Protocol (HTTP); and

forwarding, by the management agent to the client, service information sent via HTTP by the management server to the management agent.

38. The computer-readable medium of claim 37, wherein the management agent comprises a software agent that runs on a client or server.

39. A computer-readable medium encoded with a plurality of processor-executable instruction sequences for:

receiving, by a management server, a request for service, the request having originated with a client, the request having been forwarded to the management server by a management agent via Hypertext Transfer Protocol (HTTP); and

sending, by the management server to the management agent via HTTP, service information, wherein the management agent forwards the service information to the client.

40. The computer-readable medium of claim 39, wherein the service includes one of installing an operating system or application program and providing diagnostic, upgrade, or system recovery service.

41. A method for dynamically managing software on a client, comprising:  
sending, by a client to a management server, a request for service;  
receiving, by the management server, the request for service;  
querying, by the management server about the client, a management database including information about various clients; and

sending, by the management server to the client, service information based at least in part on the querying.

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42. The method of claim 41, further comprising booting, by the client, to a computer medium containing instructions to connect to the management server.

43. The method of claim 41, wherein the management server comprises a preboot execution environment (PXE) server.

44. The method of claim 41, further comprising taking action, by the client, based at least in part on the service information, the action including:

booting to a local storage medium of the client;

installing an operating system or application program specified by the management server; or

booting to an operating system retrieved from a network, the retrieved operating system being configured to manage the client.

45. The method of claim 44, wherein the retrieved operating system is configured to back up the client system, recover the client system, evaluate system information on the client, or wait for a request from the client.

46. The method of claim 41, further comprising formulating, by the management server, a command to convey the service information sent to the client.

47. A method for dynamically managing software on a client, comprising:  
receiving, by a management server, a request for service sent by a client;

sending, by the management server to the client, service information based at least in part on the querying.

48. The method of claim 47, wherein the information in the management database specifies software installed on a client.

49. The method of claim 47, wherein the querying comprises:

- determining whether an operating system is to be installed on the client;
- determining whether the client is to boot from a local storage medium of the client;

and

- selecting, if the management database does not provide information about the client, a set of default information.

50. The method of claim 49, further comprising updating the management database if it is determined that an operating system is to be installed on the client, the updating specifying that the client is to boot from a local storage medium after the operating system is installed on the client.

51. The method of claim 47, further comprising recognizing, by the management server, whether the client contains a new hardware or software component, the recognizing comprising comparing a current configuration of the client with a configuration of the client stored in the management database.

52. The method of claim 47, wherein the management server comprises a preboot execution environment (PXE) server.

53. A system for dynamically managing software on a client, comprising:

a client;

a management server configured to communicate with the client over a connection;

and

a management database accessible to the management server, the management database including information about various clients, wherein

the client is configured to send, to the management server, a request for service,

the management server is configured to receive the request for service,

the management server is configured to query the management database about the client, and

the management server is configured to send, to the client, service information based at least in part on the querying.

54. The system of claim 53, wherein the client includes a network adapter card enabled for a preboot execution environment (PXE).

55. A computer-readable medium encoded with a plurality of processor-executable instruction sequences for:

receiving, by a management server, a request for service sent by a client;

querying, by the management server about the client, a management database including information about various clients; and

56. The computer-readable medium of claim 55, further comprising entering, by a user into the management database, a type of operating system to be installed on the client.

57. The computer-readable medium of claim 55, wherein the management server comprises a preboot execution environment (PXE) server.

58. A computer-readable medium encoded with a plurality of processor-executable instruction sequences for:

sending, by a client to a management server, a request for service, wherein

the management server receives the request for service;

the management server queries, about the client, a management database including information about various clients; and

the management server sends, to the client, service information based at least in part on the querying.

59. The computer-readable medium of claim 58, wherein the client includes a network adapter card enabled for a preboot execution environment (PXE).